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CURRENT INDUSTRIAL REPORTS

Aerospace Industry (Orders, Sales, and Backlog)

1985

MA37D(85)-1

Issued July 1986

U.S. Department of Commerce
BUREAU OF THE CENSUS

SUMMARY OF FINDINGS

The backlog of orders for aircraft, missiles, space vehicles, and engines as of December 31, 1985 was $142,813 million. This was a 8 percent increase over the 1984 backlog of $132,507 million.

Net new orders received during 1985 were $110,450 million, an increase of 5 percent over the $104,863 million received in 1984. Net sales, receipts, and/or billings in 1985 totaled $100,144 million, a 13-percent increase over the $88,941 million reported in 1984.

A description of the survey methodology and related information appears on page 5.

Table 1. VALUE OF BACKLOG OF ORDERS, NET NEW ORDERS, AND NET SALES REPORTED BY MANUFACTURERS OF COMPLETE AIRCRAFT, SPACE VEHICLES, MISSILES, AND SELECTED PARTS: 1975 TO 1985

(Millions of dollars)

Year	Net new orders during year[1]	Net sales during year	Backlog, End of year
1985	110,450	100,144	142,813
1984	104,863	88,941	132,507
1983	91,647	83,453	116,585
1982	89,168	75,487	108,391
1981	74,922	69,944	94,710
1980	69,624	58,440	89,732
1979	67,561	46,173	78,548
1978	49,819	37,968	57,160
1977	38,922	33,315	45,309
1976	35,992	31,328	39,702
1975	28,995	29,473	35,038

[1] Represents new orders received during the year less terminations during the year.

Address inquiries concerning these figures to U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Jim Oliver, (301) 763-5573.

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Table 2. VALUE OF NET NEW ORDERS, NET SALES, AND BACKLOG OF ORDERS OF COMPLETE AIRCRAFT, SPACE VEHICLES, MISSILES, AND SELECTED PARTS, BY UNITED STATES GOVERNMENT AND OTHER CUSTOMERS: 1981 TO 1985

(Millions of dollars)

Year	Net new orders[1] (prime contracts and subcontracts)			Net sales, receipts, or billings			Backlog, end of year		
	Total	United States Government[2]	Other customers	Total	United States Government[2]	Other customers	Total	United States Government[2]	Other customers
1985	110,450	69,722	40,728	100,144	63,515	36,629	142,813	91,833	50,980
1984	104,863	66,968	37,895	88,941	55,777	33,164	132,507	85,626	46,881
1983	91,647	60,290	31,357	83,453	49,056	34,397	116,585	74,435	42,150
1982	89,168	58,849	30,319	75,487	42,239	33,248	108,391	63,201	45,190
1981	74,922	42,431	32,491	69,944	33,039	36,905	94,710	46,591	48,119

[1] Represents new orders received during the year less terminations during the year.
[2] Represents prime contracts only. All subcontracts, including those where it is known that the prime contract was let by the U.S. Government, are reported as subcontracts from "other customers."

Table 3. VALUE OF NET NEW ORDERS, NET SALES, AND BACKLOG OF ORDERS OF COMPLETE AIRCRAFT, SPACE VEHICLES, MISSILES, AND SELECTED PARTS, BY MILITARY AND NONMILITARY: 1981 TO 1985

(Millions of dollars)

Year	Net new orders[1] (prime contracts and subcontracts)			Net sales, receipts, or billings			Backlog, end of year		
	Total	Military	Nonmilitary	Total	Military	Nonmilitary	Total	Military	Nonmilitary
1985	110,450	70,857	39,593	100,144	65,496	34,648	142,813	101,725	41,088
1984	104,863	69,654	35,209	88,941	57,047	31,894	132,507	96,364	36,143
1983	91,647	62,053	29,594	83,453	50,525	32,928	116,585	83,757	32,828
1982	89,168	60,759	28,409	75,487	43,281	32,206	108,391	72,229	36,162
1981	74,922	43,147	31,775	69,944	33,876	36,068	94,710	54,751	39,959

[1] Represents new orders received during the year less terminations during the year.

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Table 4. VALUE OF NET NEW ORDERS, NET SALES, AND BACKLOG OF ORDERS OF COMPLETE AIRCRAFT, SPACE VEHICLES, MISSILES, AND SELECTED PARTS: 1985

(Millions of dollars)

Product description	Number of companies	Net new orders			Shipments (or net sales)	Backlog, end of year
		Total	Prime contract	Subcontract		
Total	50	110,450	107,915	2,535	100,144	142,813
Military	(X)	70,857	70,857	(X)	65,496	101,725
U.S. Government	39	64,751	64,751	(X)	59,355	87,950
Other governments	28	6,106	6,106	(X)	6,141	13,775
Nonmilitary	(X)	39,593	37,058	2,535	34,648	41,088
U.S. Government	31	4,971	4,971	(X)	4,160	3,883
Other customers	44	34,622	32,087	2,535	30,488	37,205
Complete aircraft and parts	(X)	40,215	39,516	699	34,249	62,553
Military	(X)	24,526	24,526	(X)	21,642	40,205
U.S. Government	18	20,062	20,062	(X)	17,783	30,462
Other governments	13	4,464	4,464	(X)	3,859	9,743
Nonmilitary	(X)	15,689	14,990	699	12,607	22,348
U.S. Government	7	15,689	14,990	[3](X)	12,607	22,348
Other customers	24			[3]699		
Aircraft engines and parts	(X)	9,727	9,727	[1]	9,691	13,638
Military	(X)	3,675	3,675	(X)	4,116	7,688
U.S. Government	7	3,675	3,675	(X)	4,116	7,688
Other governments	2					
Nonmilitary	(X)	6,052	6,052	[1]	5,575	5,950
U.S. Government	4	14	14	(X)	5,575	5,950
Other customers	8	6,038	6,038	[1]		
Missile systems and parts (excluding propulsion units)	(X)	8,122	8,122	[1]	7,975	10,190
Military	(X)	7,937	7,937	(X)	7,846	9,967
U.S. Government	17	7,211	7,211	(X)	7,399	8,994
Other governments	6	726	726	(X)	447	973
Nonmilitary	(X)	185	185	[1]	129	223
U.S. Government	1	185	185	(X)	129	223
Other customers	7			[1]		
Space vehicle systems and parts (excluding propulsion units)	(X)	6,847	6,847	[1]	6,271	5,200
Military	(X)	4,547	4,547	(X)	4,212	3,434
U.S. Government	15	4,547	4,547	(X)	4,212	3,434
Other governments	1			(X)		
Nonmilitary	(X)	2,300	2,300	[1]	2,059	1,766
U.S. Government	12	1,389	1,389	(X)	1,298	602
Other customers	8	911	911	[1]	761	1,164
Engines and/or propulsion units for missile systems (including parts)	(X)	[2]1,383	[2]1,383	[1]	[2]1,361	[2]2,385
Military	(X)	[2]1,323	[2]1,323	(X)	[2]1,256	[2]2,261
U.S. Government	12	[2]1,323	[2]1,323	(X)	[2]1,256	[2]2,261
Other governments	5			(X)		
Nonmilitary	(X)	60	60	[1]	105	124
U.S. Government	2	60	60	(X)	105	124
Other customers	5			[1]		
Engines and/or propulsion units for space vehicles (including parts)	(X)	729	729	[1]	1,105	417
Military	(X)	[2]	[2]	(X)	[2]	[2]
U.S. Government	8	[2]	[2]	(X)	[2]	[2]
Other governments	1	[2]	[2]	(X)	[2]	[2]
Nonmilitary	(X)	729	729	[1]	1,105	417
U.S. Government	6	729	729	(X)	1,032	417
Other customers	5			[1]	73	
Other aircraft, space vehicle, and missile activities	(X)	13,818	12,599	1,219	12,608	19,091
Military	(X)	11,040	11,040	(X)	9,976	15,804
U.S. Government	29	10,586	10,586	(X)	9,366	14,304
Other governments	15	454	454	(X)	610	1,500
Nonmilitary	(X)	2,778	1,559	1,219	2,632	3,287
U.S. Government	17	546	546	(X)	542	356
Other customers	25	2,232	1,013	1,219	2,090	2,931
Research and development (under contract)	(X)	6,441	6,299	142	5,158	7,584
Military	(X)	4,863	4,863	(X)	4,515	5,519
U.S. Government	27	4,749	4,749	(X)	4,435	5,432
Other governments	10	114	114	(X)	80	87
Nonmilitary	(X)	1,578	1,436	142	643	2,065
U.S. Government	16	1,578	1,436	(X)	485	2,065
Other customers	17			142	158	
All other products and services	(X)	23,168	22,693	475	21,726	21,755
Military	(X)	12,946	12,946	(X)	11,933	16,851
U.S. Government	28	12,150	12,150	(X)	11,285	16,222
Other governments	14	796	796	(X)	648	629
Nonmilitary	(X)	10,222	9,747	475	9,793	4,904
U.S. Government	18	909	909	(X)	707	600
Other customers	25	9,313	8,838	475	9,086	4,304

Note: Net new orders represent new orders received during the year less terminations during the year.

The percent of estimation of each item is indicated as follows (see "Description of Survey" for a discussion of estimation of missing reports): [4]10 to 25 percent of this item is estimated.

(X) Not applicable.

[1] Net new orders under subcontract included with prime contract net new orders to avoid disclosing figures for individual companies.

[2] Data for military engines and/or propulsion units for space vehicles (including parts) are included with data for military engines and/or propulsion units for missile systems (including parts).

Table 5. VALUE OF NET NEW ORDERS, NET SALES, AND BACKLOG OF ORDERS OF COMPLETE AIRCRAFT, SPACE VEHICLES, MISSILES, AND SELECTED PARTS: 1984

(Millions of dollars)

Product description	Number of companies	Net new orders			Shipments (or net sales)	Backlog, end of year
		Total	Prime contract	Subcontract		
Total	50	104,863	101,556	3,307	88,941	132,507
Military	(X)	69,654	69,654	(X)	57,047	96,364
U.S. Government	41	62,451	62,451	(X)	51,412	82,554
Other governments	28	7,203	7,203	(X)	5,635	13,810
Nonmilitary	(X)	35,209	31,902	3,307	31,894	36,143
U.S. Government	31	4,517	4,517	(X)	4,365	r3,072
Other customers	45	30,692	27,385	3,307	27,529	33,071
Complete aircraft and parts	(X)	37,376	36,342	1,034	28,257	56,587
Military	(X)	23,312	23,312	(X)	18,218	37,321
U.S. Government	18	19,228	19,228	(X)	15,136	28,183
Other governments	13	4,084	4,084	(X)	3,082	9,138
Nonmilitary	(X)	14,064	13,030	1,034	10,039	19,266
U.S. Government	9	14,064	13,030	(X)	10,039	19,266
Other customers	23			a1,034		
Aircraft engines and parts	(X)	9,726	9,726	(1)	9,028	13,602
Military	(X)	6,582	6,582	(X)	5,050	8,129
U.S. Government	7	6,582	6,582	(X)	5,050	8,129
Other governments	2					
Nonmilitary	(X)	3,144	3,144	(1)	3,978	5,473
U.S. Government	4	19	19	(X)	a30	5,473
Other customers	7	3,125	3,125	(1)	3,948	
Missile systems and parts (excluding propulsion units)	(X)	7,731	7,623	108	6,094	10,043
Military	(X)	7,623	7,623	(X)	5,983	9,876
U.S. Government	17	7,158	7,158	(X)	5,620	9,182
Other governments	6	465	465	(X)	363	694
Nonmilitary	(X)	108	-	108	111	167
U.S. Government	-	-	-	(X)	-	-
Other customers	6	108	-	108	111	167
Space vehicle systems and parts (excluding propulsion units)	(X)	4,984	4,984	(1)	5,225	4,624
Military	(X)	3,385	3,385	(X)	3,019	3,099
U.S. Government	14	3,385	3,385	(X)	3,019	3,099
Other governments	1					
Nonmilitary	(X)	1,599	1,599	(1)	2,206	1,525
U.S. Government	12	1,175	1,175	(X)	1,335	511
Other customers	8	a424	a424	(1)	871	1,014
Engines and/or propulsion units for missile systems (including parts)	(X)	2 2,391	2 2,391	(1)	2 1,211	2 2,363
Military	(X)	2 2,258	2 2,258	(X)	2 1,116	2 2,194
U.S. Government	12	2 2,258	2 2,258	(X)	2 1,116	2 2,194
Other governments	5					
Nonmilitary	(X)	133	133	(1)	95	169
U.S. Government	3	133	133	(X)	95	169
Other customers	5			(1)		
Engines and/or propulsion units for space vehicles (including parts)	(X)	1,379	1,379	(1)	1,094	793
Military	(X)	(2)	(2)	(X)	(2)	(2)
U.S. Government	6	(2)	(2)	(X)	(2)	(2)
Other governments	1	(2)	(2)	(X)	(2)	(2)
Nonmilitary	(X)	1,379	1,379	(1)	1,094	793
U.S. Government	5	1,379	1,379	(X)	1,026	793
Other customers	6			(1)	68	
Other aircraft, space vehicle, and missile activities	(X)	12,248	10,491	1,757	10,607	17,881
Military	(X)	9,178	9,178	(X)	8,267	14,740
U.S. Government	29	8,421	8,421	(X)	7,600	13,084
Other governments	15	757	757	(X)	667	1,656
Nonmilitary	(X)	3,070	1,313	1,757	2,340	3,141
U.S. Government	17	495	495	(X)	453	352
Other customers	27	2,575	818	1,757	1,887	2,789
Research and development (under contract)	(X)	5,263	5,263	(1)	4,895	6,301
Military	(X)	4,495	4,495	(X)	3,978	5,171
U.S. Government	28	4,495	4,495	(X)	3,952	5,118
Other governments	10				26	53
Nonmilitary	(X)	768	768	(1)	917	r1,130
U.S. Government	16	639	639	(X)	729	1,130
Other customers	13	129	129	(1)	188	
All other products and services	(X)	23,765	23,357	408	r22,530	20,313
Military	(X)	12,821	12,821	(X)	r11,416	15,834
U.S. Government	26	12,343	12,343	(X)	r10,726	15,346
Other governments	15	478	478	(X)	690	488
Nonmilitary	(X)	10,944	10,536	408	11,114	4,479
U.S. Government	17	750	750	(X)	740	409
Other customers	27	10,194	9,786	a408	10,374	4,070

Note: Net new orders represent new orders received during the year less terminations during the year.

The percent of estimation of each item is indicated as follows (see "Description of Survey" for a discussion of estimation of missing reports): a10 to 25 percent of this item is estimated. b25 to 50 percent of this item is estimated.

- Represents zero. rRevised by 5 percent or more from previously published figures. (X) Not applicable.

1 Net new orders under subcontract included with prime contract net new orders to avoid disclosing figures for individual companies.
2 Data for military engines and/or propulsion units for space vehicles (including parts) are included with data for military engines and/or propulsion units for missile systems (including parts).

DESCRIPTION OF SURVEY

Scope of Survey. This survey covers establishments primarily engaged in the development and/or manufacture of aerospace products, including aircraft, aircraft engines, aircraft parts and accessories, missiles and space vehicle systems, missile and space vehicle engines or propulsion units, and parts and subassemblies for missiles and space vehicles. An establishment is "primarily engaged" in aerospace if the value of aerospace products and services produced by that establishment exceeds the value of the establishment's production of other goods and services. Company plants or divisions in which the primary activity is other than the development and/or manufacture of aerospace products and services are not included in this survey.

Survey Methodology.. The statistics in this publication were collected by mail on Bureau of the Census annual Form MA37D, Aerospace Industries. The survey panel includes all known establishments in which the principal business is the development or production of aerospace products. Approximately 51 companies are included.

Reliability of Data. Survey error may result from several sources: (1) inability to obtain information about all cases in the survey, (2) response errors, (3) definitional difficulties, (4) differences in the interpretation of questions, (5) mistakes in recording or coding the data obtained, and (6) other errors of collection, response, coverage, and estimation for missing data. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is due to imputing data for nonrespondents, for late reporters, and for data which failed the logic edit. Missing figures are imputed based on year-to-year movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is not precisely known, but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

Revisions to Previous Period Data. Data may be revised as the result of corrected data from respondents, late reports for which imputations were made as described above, or other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

Adjustment for Price Change. All dollar figures included in this publication are in current dollars; i.e., they have not been adjusted for price change.

EXPLANATION OF TERMS

Shipments (or Net Sales). Represents consolidated company sales, receipts, or billings, net after discounts and allowances. For firms reporting only for specific aerospace divisions or plants, it includes the value of the division or plant sales only. It includes all sales from aerospace production and receipts for research and development performed for others. Transfers to other reporting units (for example, separate aerospace divisions of the same company) are included.

Work performed under a fixed price contract is reported as a shipment if the product is delivered during the year. Work done on a cost-plus contract reflects cost incurred plus a portion of the profits for the contract (value of work done) during the year. Value of work done may be based on (a) multiplying the estimated percentage of work completed during the year by the contract price, or (b) net billings for work done during the year.

Net New Orders. Includes (a) the sales value of orders received during the current reporting period for products and services to be delivered at some future date; (b) the sales value of orders for immediate delivery which have resulted in sales or shipments during the current reporting period; and (c) the net sales value of contract change documents which increase or decrease the sales value of the orders to which they are related when the parties concerned are in substantial agreement as to the amount involved. The sales value of cancellations of existing orders is deducted. Only those orders that are supported by binding legal documents, such as signed contracts or letter contracts are included as orders. In the case of letter contracts, the full amount of sales value is included if the parties concerned are in substantial agreement on this amount; otherwise, only the funds specifically authorized to be expended are included.

Backlog, End of Year (Unfilled Orders). Includes all orders as defined above that have not yet been reflected as shipments. Generally, unfilled orders at the end of the reporting period are equal to unfilled orders at the end of the prior period, plus net new orders received, less net shipments.

Prime Contracts and Subcontracts. Separate dollar values are reported for prime contracts and those received under subcontracts. All subcontracts, including those where it is known that the prime contract was let by a government, are reported as subcontracts received from "other customers."

Military and Nonmilitary. The term "military" refers to complete aircraft, aircraft engines, missile systems, space vehicle systems, engines and/or propulsion units for missile systems or space vehicles, and other aerospace related activities for military applications, whether for tactical, strategic, or support functions. The term "nonmilitary" refers to the same products not built to military specifications.

TYPE OF CUSTOMER

U.S. Government (Military). Includes contracts with the Department of Defense (DOD) and other U.S. Government agencies for

products built to military specifications. Contracts for which the ultimate customer is a foreign customer, such as contracts made under the Foreign Military Assistance Progam, are excluded.

Other Governments (Military). Includes contracts for products built to military specifications for governments other than the United States. It includes contracts through DOD or other U.S. Government agencies for which the ultimate customer is a foreign government. Contracts for foreign governments not to military specifications are classified as "nonmilitary" to other customers.

U.S. Government (Nonmilitary). Includes contracts with any U.S. Government agency for products not built to military specifications.

Other Customers (Nonmilitary). Includes contracts for products not built to military specifications for all customers other than U.S. Government agencies. It includes both domestic and foreign commercial customers as well as foreign governments.

HISTORICAL NOTE

Data on the development and production of aerospace products have been collected by the Bureau of the Census since 1948. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959), available at your local Federal Depository Library. A list of these libraries may be obtained from the Bureau of the Census regional offices:

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CONTACTS FOR DATA USERS

Subject Area	Contact	Phone Number
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International Trade Administration	Randy Myers	(202) 377-0678

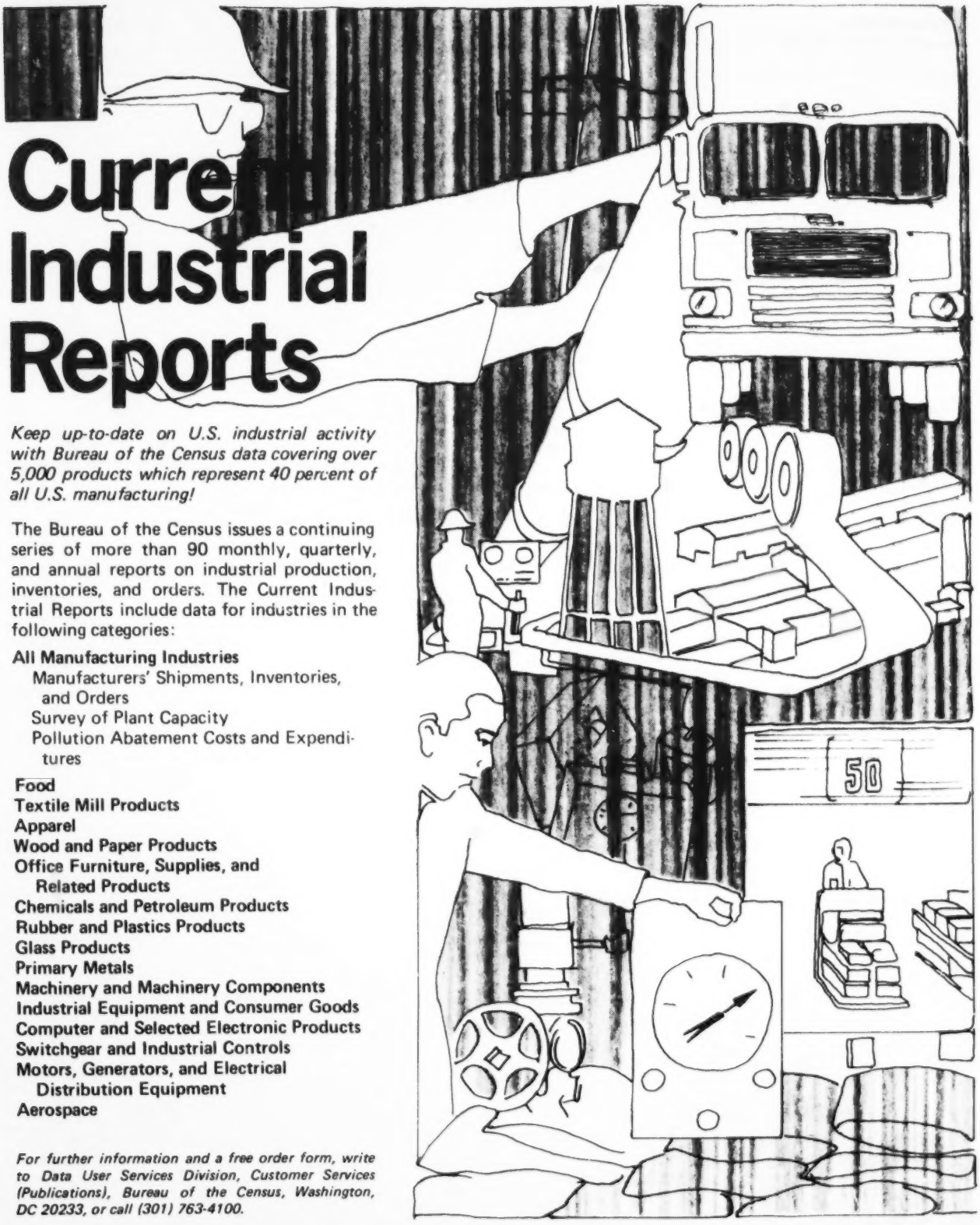
INDUSTRY FINANCING

This survey is funded by the Aerospace Industries Association of America, Inc.

ACKNOWLEDGMENTS

This report was prepared in the Industry Division, Bureau of the Census, under the direction of Malcolm Bernhardt, Chief, Current Durables Branch, and Kenneth McBeth, Chief, Machinery and Equipment Section. James L. Oliver was directly responsible for the review of the data and preparation of the report. Gaylord Worden, Chief of the Division, and Thomas L. Mesenbourg, Assistant Chief for Current Industrial Reports, provided overall direction and coordination to this project.

Current Industrial Reports



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